



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/348,494	07/07/1999	KJELL GUSTAFSSON	040070-244	5321

21839 7590 05/08/2002

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

LY, NGHI H

ART UNIT PAPER NUMBER

2682

DATE MAILED: 05/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

h

54

Office Action Summary

Application No.

09/348,494

Applicant(s)

GUSTAFSSON ET AL.

Examiner

Nghi H. Ly

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 02/15/02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-5 and 14-16 is/are allowed.
- 6) ☐ Claim(s) 1,2,6-13 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 02/15/02 have been fully considered but they are not persuasive.

On page 5 of Applicant's remarks, Applicant argues that Conner fails to disclose selectively deactivating a second radio frequency processing circuit 18a based on a determination as to whether diversity is appropriate.

In response, Conner does indeed teach this limitation. See column 1 line 53-56 which states "Switching circuitry closes or opens the switch to connect one antenna or plurality of antennas to the rest of the receiver circuitry when the signal strength drops below a certain threshold". Since the opening and closing states of the frequency processing circuit 18A is determined based on the quality of the received signal, the frequency processing circuit 18a must based on a determination as to whether diversity is appropriate.

In addition, the examiner believes that in this case it is very important to characterize what the combination of the admitted prior art of figure 3 and Conner results. After the combination of the admitted prior art of figure 3 and Conner is made, the RF processing circuit 330 of the modified admitted prior art of figure 3 will be ON at all times (*as suggested by Conner because the circuit 20 in Conner is ON at all times*); the RF processing circuit 332 of the modified admitted prior art of figure 3 will be ON or OFF based upon whether the diversity is appropriate (*as suggested by Conner because the circuit 18 in Conner is either ON or OFF based upon whether the diversity is*

Art Unit: 2682

appropriate. More specifically, if the signal strength is low then the diversity is needed).

Therefore, it is apparent that after the combination of the admitted prior art of figure 3 and Conner is made, the modified admitted prior art of figure 3 discloses all the claimed limitations.

On page 6 of Applicant's remarks, Applicant argues that the stated motivation "in order to obtain an inexpensive and simple diversity receiver" is improper. The examiner, however, disagrees. The stated motivation is clearly found in Conner, column 2 lines 43-49.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 6-13, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art the admitted by applicant in figure 3 of the present specification in view of Conner at el (US 6,256,484).

Regarding to claims 1, 13, the admitted prior art disclose a mobile station comprises a first antenna, a second antenna, a radio frequency circuit receiving and processing signal from second antenna and a base band processing circuit receiving and combining processed radio frequency signals from said the first radio frequency

Art Unit: 2682

processing circuit and from said second radio frequency processing circuit (see fig.3).

The admitted prior art fails to disclose selectively activating and deactivating said second radio frequency processing circuit based on a determination as to whether diversity is appropriate. Conner et al disclose selectively activating and deactivating a second radio frequency processing circuit 18A based on a determination as to whether diversity is appropriate (see column 1, line 50-59). Therefore, it would have been obvious to one of ordinary skill in the art to provide the above teaching of Conner to the admitted prior art, in order to obtain an inexpensive and simple diversity receiver (as suggested by Conner at column 2 lines 43-49).

As to claims 6, 8-12, 17-19, the above combination teaches that the signal strength received at antenna 18A is monitored in order to determine as to whether diversity is appropriate (see Conner), instead of signal quality of a demodulated signal, or likelihood comparison, or bit error rate, or signal to interference ratio, or number of re-transmission required as claimed. However, using signal quality of a demodulated signal, or likelihood comparison, or bit error rate, or signal to interference ratio, or number of re-transmission required are known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the above combination as claimed, in order to improve signal quality of a demodulated signal, or bit error rate, or signal to interference ratio, or number of re-transmission.

As to claim 7, the above combination teaches the claimed limitation (see Conner, column 1 lines 50-67).

Art Unit: 2682

Regarding claim 2, the rejection to claim 1 as set forth above is herein incorporated by reference. In addition, the prior art also teaches the first radio frequency processing circuit also transmits signal from said mobile station (see fig. 3 the arrow from the base band processing 340 to RF processing 330).

Allowable Subject Matter

4. Claims 3-5,14-16 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3-5,14-16, prior art disclose a mobile station comprises a first antenna, a second antenna, a radio frequency circuit receiving and processing signal from second antenna and a base band processing circuit receiving and combining processed radio frequency signals from said the first radio frequency processing circuit and from said second radio frequency processing circuit (see fig.3). Conner et al (US 6,256,484) disclose that the control signal to said second radio frequency processing circuit to selectively active and deactivate said second radio frequency processing circuit base on a determination as to whether diversity is appropriate (see column 1, line 50-59). The combination of the above references fail to teach the control signal generated by said base band processing circuit is controlled by a control signal from a base station with which said mobile station is in communication as specified in the claims.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (703) 605-5164. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (703) 308-6739. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Art Unit: 2682

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Nghi Han Ly



April 24, 2002



NGUYEN T. VO
PRIMARY EXAMINER